

AMENDMENTS TO THE DRAWINGS

The attached revised sheets of drawings include Figures 1-5 and the attached new sheets of drawings include Figures 6-9.

Attachment: three revised sheets and two new sheets

REMARKS/ARGUMENTS

Claims 1, 3, 5, 6, 10-15, 17 and 21-27 remain pending in the present application. Claim 17 was objected to. Claims 1, 3, 5, 6, 10-15, 17 and 21-27 were rejected. Claim 17 is hereby amended. New claims 28-39 are hereby added.

Canceled Claims

Dependent claims 2 and 4 were canceled in previous amendments in view of the incorporation of their respective limitations into claim 1. Claims 7-9, 16 and 18-20, which were withdrawn from consideration as being non-elected in response to an earlier restriction requirement, have been canceled herein without prejudice to pursue those claims in further continuing application(s) filed during the pendency of the present application.

Drawing Objections – New Figures 6-9

The drawings were objected to under 37 CFR 1.83(a) as lacking cutting blades with geometric shapes capable of making a circular cut, an oval cut, a heart shaped cut and a star shaped cut. Applicant submits that the attached new sheets, which include Figures 6-9, show cutting blades with geometric shapes capable of making the specified cuts. Applicant also submits that the attached new sheets are fully supported by at least paragraph [0020] of the specification (as numbered in U.S. Patent Application Publication No. 2005/0166733), which states:

[0020] In another embodiment of the present web cutting system the knife holder is also formed of an elastomeric material. The shaped blades in this embodiment are configured so that the action of the apparatus produces an angled or curved geometric shape in the traveling web of material. Some examples of such geometric shapes can include, but are not limited to, hearts, stars, circles, or ovals.

Applicant therefore submits that the attached new drawings, which include Figures 6-9, overcome the drawing objection.

Objection to Claim 17

Claim 17 was objected to as informal for using the transitional phrase "compromises." Claim 17 as amended herein uses the transitional phrase "comprising."

Rejection of Claims 1, 3, 5-6, 10-15, 17 and 21-27 for Obviousness

Claims 1, 3, 5-6, 10-15, 17 and 21-27 were rejected under 35 U.S.C. § 103(a) for obviousness in view of the combination of Henc U.S. Patent No. 3,119,312 with McMahon et al., U.S. Patent No. 4,640,165.

Of the rejected claims, claims 1 and 17 are the only independent claims. Independent claim 1 recites:

...said shaped slot having a component that extends circumferentially such that said shaped slot traverses a non-linear path on said knife roller periphery...

* * *

wherein said knife holder is formed of a resilient elastomeric material having sufficient resiliency to accommodate radial and circumferential force imposed upon said knife blade...

Similarly, independent claim 17 recites:

a knife holder formed of a resilient elastomeric material with sufficient resiliency to accommodate at least one directional force...

* * *

...said shaped slot having a component that extends circumferentially such that said shaped slot traverses a non-linear path on said knife roller periphery...

Thus, all of the pending previously rejected claims now recite (1) a knife that can be carried in a non-linear slot, and (2) a knife holder formed of a resilient elastometric material.

As noted in the Office Action, Henc discloses (1) a knife that can be carried in a non-linear slot, and McMahon discloses (2) a knife holder formed of a resilient elastometric material. However, the two references cannot be combined to render claims 1 and 17 obvious because Henc teaches away from using a knife holder formed of an elastometric material (as taught by McMahon). Specifically, Henc discloses a system in which the blade is held rigidly by the blade holder and the anvil is made of a resilient material. Some relevant portions of McMahon and Henc are provided below.

McMahon teaches a knife holder 30 made of elastometric material, which allows a knife 34b being held therein to absorb impact by being compressed in the radial direction when the knife cutting edge 66 impacts an anvil surface 22. Specifically, McMahon states:

However, when the knife cutting edge 66 engages web 16 against an anvil roller cutting surface, such as anvil surface 22, the displacement of the entire knife blade 34b, including hole 60 therein, may move clear to the position shown by solid lines in FIG. 5. The bottom surface 68 settles into the elastomeric material of knife holder 30, and thus knife 34b seats itself properly for engagement with anvil surface 22.

Due to the fact that the diameter of retaining pin 64 is smaller than the diameter of hole 60 in the knife, retaining pin 64 does not impede the movement of knife 34b into knife holder 30.

(McMahon, column 6, lines 47-58 (emphases added).)

As taught by Henc, the knife 24 does not move when the knife blade impacts an anvil 42. (See Henc, column 2, lines 46-65, for example, referring to the blade 24 as: (1) "fixed" in the channel by bearing pins, and (2) "locked in position" by epoxy or other "holding material"; see also Figures 2, 5 and 6, which show the blade 24 bottomed out on either the saddle 18 or the holding pin 32.) In fact, as taught by Henc, the anvil 42 is made of rubber or resilient material that allows a blade 24 to be imbedded in the anvil 42. Specifically, Henc states:

The backing anvil 42 against which the serrated die blade 24 bears is formed of flexible rubber or suitable resilient plastic or other material.

* * *

The coaction between the serrated die blade 24 and resilient backing anvil is best illustrated in FIGS. 7 and 8 wherein it will be seen that as each tooth of the serrated die blade is rotated into engagement with the board or other material indicated by B it shears entirely through the material and imbeds in the resilient anvil during its path of rotation.

(Henc, column 2, lines 66-68; column 3, lines 15-21.)

Employing a knife holder made of elastometric material that allows the knife to be displaced when the blade contacts an anvil surface (as taught in McMahon) with an anvil that is made of resilient material that allows the blade to imbed itself into the resilient anvil (as taught by Henc) would not have been prevalent to one skilled in the art because it would not provide an advantage over using a rigidly

held knife in connection with an anvil made of a resilient material (as taught by Henc) and may be less effective.

Thus, because Henc teaches away from using a knife blade formed of elastometric material as taught by McMahon, Henc and McMahon cannot properly be combined to support an obviousness rejection of independent claims 1 and 17. Applicants therefore submit that independent claims 1 and 17, and the claims that depend therefrom, are not rendered unpatentable for obviousness by the combination of Henc with McMahon.

New Claims 28-39

New claim 28 is the only new independent claim. Like independent claim 1, new independent claim 28 recites:

...said shaped slot having a component that extends circumferentially such that said shaped slot traverses a non-linear path on said knife roller periphery...

* * *

wherein said knife holder is formed of a resilient elastomeric material having sufficient resiliency to accommodate radial and circumferential force imposed upon said knife blade...

For the same reasons discussed above in connection with independent claim 1, Henc and McMahon cannot be combined to render new independent claim 28, or claims that depend therefrom, unpatentable for obviousness.

In addition, new independent claim 28 recites:

at least one linear slot formed in the radially outwardly presented surface of said knife holder; and

at least one linearly extending blade having a plurality of radially outwardly presented tines, wherein said linearly extending blade is capable of being carried within said linear slot of said knife holder...

Support for these limitations can be found in original Figures 1-5, which show a linear slot formed in the radially outwardly presented surface of said knife holder and paragraph [0033] of the specification (as numbered in U.S. Patent Application Publication No. 2005/0166733), which states:

[0033] The cutting action will also produce a chip of web due to the spacing between the shaped knife blades 19. This chip of web can be allowed to fall away from the severed sheets. Alternatively, in another embodiment of the apparatus, an additional knife blade extends linearly along the longitudinal center axis of said knife holder. This linearly extending blade can be a uniform blade to cut the web chip into a smaller piece, or can have a plurality of spaced, outwardly radially presented tines. These tines are capable of piercing and removing chips of the traveling web of material.

Applicant therefore submits that new claims 28-39 are fully supported by the original specification.

Neither Henc nor McMahon, alone or in combination, teach or suggest a linearly extending blade having a plurality of radially outwardly presented tines. Applicant submits that the combination of Henc and McMahon cannot render obvious independent claim 28 or claims that depend therefrom.

Revised Figures 1-5

Applicant recognizes that pursuant to 37 CFR 1.83(a), the drawings must show every feature of the invention specified in the claims. Applicant also recognizes that a “linearly extending blade having a plurality of radially outwardly presented tines,” as claimed in new claim 28, is not shown in original Figures 1-5. Thus, Applicant has submitted revised Figures 1-5 that show a “linearly extending blade having a plurality of radially outwardly presented tines.” Applicant submits that the attached revised sheets are fully supported by at least paragraph [0033] of the specification (as numbered in U.S. Patent Application Publication No. 2005/0166733), which states:

[0033] The cutting action will also produce a chip of web due to the spacing between the shaped knife blades 19. This chip of web can be allowed to fall away from the severed sheets. Alternatively, in another embodiment of the apparatus, an additional knife blade extends linearly along the longitudinal center axis of said knife holder. This linearly extending blade can be a uniform blade to cut the web chip into a smaller piece, or can have a plurality of spaced, outwardly radially presented tines. These tines are capable of piercing and removing chips of the traveling web of material.

Applicant therefore submits that the attached revised drawings, which include Figures 1-5, fully comply with the requirements of 37 CFR 1.83(a).

Amendments to the Specification

To reflect the addition of Figures 6-9, new paragraphs [0026.1] through [0026.4] have been added to the specification after paragraph [0026] (as numbered in U.S. Patent Application Publication No. 2005/0166733).

To reflect the revision to Figures 1-5, new paragraph [0033.1] has been added to the specification after paragraph [0033] (as numbered in U.S. Patent Application Publication No. 2005/0166733).

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In view of the foregoing amendments and remarks, Applicant submits that claims 1, 3, 5, 6, 10-15, 17 and 21-39, are allowable. The Examiner is invited to telephone the applicant's undersigned attorney at 312-775-8123, if any unresolved matters remain.

Please charge any fees incurred in connection with this submission to Deposit Account No. 13-0017.

Respectfully submitted,

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